WHAT IS CLAIMED IS:

1. A solid state image pickup device comprising:

a photoelectric conversion unit including a first region of a first conductive type formed on a semiconductor substrate and having a principal surface, a second region of a second conductive type formed in said first region, and a third region of the first conductive type formed between said second region and the principal surface;

a fourth region of the second conductive type formed in said first region; and

a charge transfer unit including said first region, an insulation layer on said first region and a control electrode provided on said insulation layer, for transferring a signal charge accumulated in said photoelectric conversion unit, to said fourth region;

wherein said photoelectric conversion unit and said charge transfer unit are connected through a fifth region of said second conductive type.

2. A solid state image pickup device according to claim 1, wherein said fifth region is present under said control electrode of said charge transfer unit.

3. A solid state image pickup device according to claim 1, wherein said fifth region is formed by impurity introduction after the formation of the

control electrode of said charge transfer unit.

4. A solid state image pickup device according to claim 1, wherein said fifth region is formed by a process including at least a step of introducing an impurity of said second conductive type by ion implantation, utilizing the control electrode of said charge transfer unit as a mask.

5. A solid state image pickup device according to claim 4, wherein said fifth region is formed by a process including at least a step of introducing an impurity of said second conductive type by ion implantation having an ion implantation angle, utilizing the control electrode of said charge transfer unit as a mask.

6. A solid state image pickup device according to claim 1, wherein said fifth region is formed by a process including at least a step of introducing an impurity of said second conductive type by ion implantation, utilizing the control electrode of said charge transfer unit and mask means provided on a side of the control electrode of said charge transfer unit as a mask.

7. A solid state image pickup device according to

claim 1, wherein said second and fifth regions are formed by at least a same ion implantation step of introducing an impurity of said second conductive type, utilizing the control electrode of said charge transfer unit as a mask.

8. A solid state image pickup device according to claim 1, wherein said second and fifth regions are formed by at least plural ion implantation steps of introducing an impurity of said second conductive type, utilizing the control electrode of said charge transfer unit as a mask.

9. A solid state image pickup device comprising:

a photoelectric conversion unit including a first region of a first conductive type formed on a semiconductor substrate and having a principal surface, a second region of a second conductive type formed in said first region, and a third region of the first conductive type formed between said second region and the principal surface;

a fourth region of the second conductive type formed in said first region; and

a charge transfer unit including said first region, an insulation layer on said first region and a control electrode provided on said insulation layer, for transferring a signal charge accumulated in said

photoelectric conversion unit, to said fourth region;

wherein said second region is formed by ion implantation of an impurity of said second conductive type, utilizing the control electrode of said charge transfer unit as a mask.

10. A solid state image pickup device according to claim 9, wherein the first region of said charge transfer unit is a floating diffusion region, and there is provided an amplifying MOS transistor having a gate electrode connected to said floating diffusion region.

11. A method for forming a solid state image pickup device comprising a photoelectric conversion unit including a first region of a first conductive type formed on a semiconductor substrate and having a principal surface, a second region of a second conductive type formed in said first region, and a third region of the first conductive type formed between said second region and the principal surface; a fourth region of the second conductive type formed in said first region; and a charge transfer unit including said first region, an insulation layer on said first region and a control electrode provided on said insulation layer, for transferring a signal charge accumulated in said photoelectric conversion unit, to said fourth region the method comprising:

a step of forming a fifth region of said second conductive type between said photoelectric conversion unit and said charge transfer unit.

12. A method for forming a solid state image pickup device according to claim 11, wherein said second region is formed by an ion implantation step of an impurity of said second conductive type, utilizing the control electrode of said charge transfer unit as a mask.

13. A method for forming a solid state image pickup device according to claim 12, wherein said ion implantation step implants ions with an ion implantation angle.

14. A method for forming a solid state image pickup device according to claim 11, wherein said second and fifth regions are formed by a process including at least a step of introducing an impurity of said second conductive type plural times by ion implantation, utilizing the control electrode of said charge transfer unit as a mask.

15. A method for forming a solid state image pickup device according to claim 11, wherein said fifth region is formed by forming said third region by ion

implantation of an impurity of said first conductive type, utilizing the control electrode of said charge transfer unit and mask means provided on a side of the control electrode of said charge transfer unit as a mask.